



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/692,613

10/24/2003

Mark A. Francis

K-2043

8816

27877

7590

05/10/2006

KENNAMETAL INC.

P.O. BOX 231

1600 TECHNOLOGY WAY

LATROBE, PA 15650

EXAMINER

ADDISU, SARA

ART UNIT

PAPER NUMBER

3722

DATE MAILED: 05/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/692,613	<b>Applicant(s)</b> FRANCIS ET AL.	
	<b>Examiner</b> Sara Addisu	<b>Art Unit</b> 3722	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 14 February 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 17, 24, 25 and 46-49 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 17, 24, 25 and 46-49 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 February 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### DETAILED ACTION

1. This Office Action is in response to the amendment filed 2/14/06. Claims 18-23 and 26-45 have been cancelled. Currently, claims 17, 24, 25 and 46-49 are pending in this application.

### *Drawings*

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "nominal cutting diameter" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

Art Unit: 3722

the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 1, lines 11 and 12 recites the limitation “the tapered cutting edge”.

There is insufficient antecedent basis for this limitation in the claim. Line 10 recites “a cutting edge” and not “a tapered cutting edge”. For the purpose of this Office Action, Examiner assumed that line 10 reads “a tapered cutting edge”.

***Claim Rejections - 35 USC § 102 & 103***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 3722

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

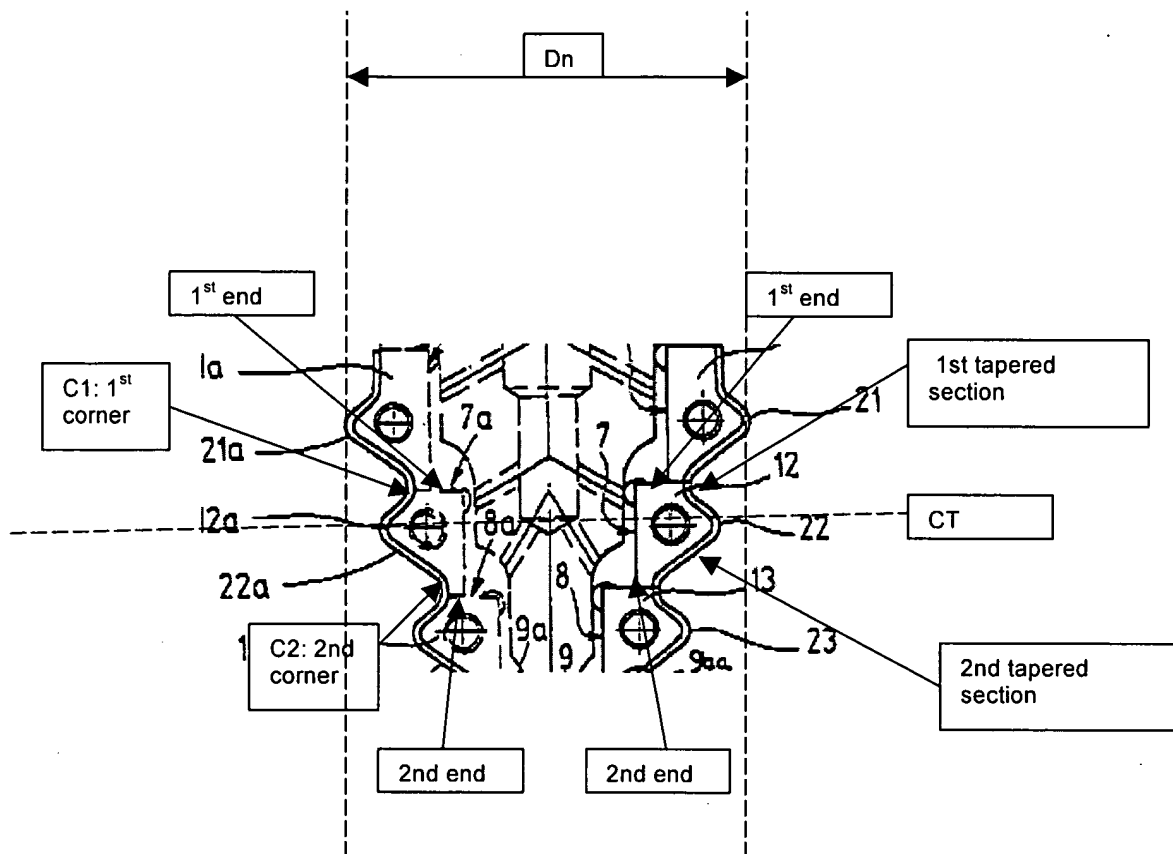
4. Claims 17, 24, 25, 46 and 48 are rejected under 35 U.S.C. 102(b) as being anticipated by Wetli et al. (USP 6,322,296), or, in the alternative, under 35 U.S.C. 103(a) as obvious over Wetli et al. (USP 6,322,296).

Regarding claim 17, WETLI ET AL. teaches a rotary cutting tool (1) including a body (2) having first and second flutes (4,5) including a first and second insert receiving pockets with first and second inserts (12, 12a, respectively) mounted in them ('296, figures 2 and 5). WETLI ET AL. also teaches each cutting insert (12, 12a) having a first end, a second end, a centerline (CT) disposed midway between the first and second ends, a tapered cutting edge (22, 22a) spanning between the first and the second end, a first corner (c1) formed at the juncture of the tapered cutting edge and the first end and a second corner (c2) formed at the juncture of the tapered cutting edge and the second end (see figure below). Additionally, WETLI ET AL. teaches the tapered cutting edges (22, 22a) of the insert being defined by a first and second tapered section, forming a convex curve configuration of a constant radius defining a highpoint there between (see figure below). Regarding claims 24 and 25, WETLI ET AL. teaches helically arranged insert receiving pockets and flutes ('296, Col. 3, lines 3-5 and Col 7, lines 24-29). WETLI ET AL. also teaches a nominal cutting diameter (Dn: see below) and the first and second corners of each insert lie within the nominal cutting diameter

Art Unit: 3722

(Dn) when the tool is rotated. Regarding claims 46 and 48, it is inherent that as basic manufacturing practice, tools have a predetermined dimensional tolerance (also admitted by Applicant on Page 5, lines 29-30) and the tolerances are set such that the tool stays within the set tolerance to ensure that discrepancies and poor workmanship are not introduced. Therefore, it is inherent that WETLI ET AL.'s tool has a predetermined dimensional tolerance and the radial runout compensation dimension of the insert would have to be greater than the predetermined dimensional tolerance in order for it to function/cut properly. It is also inherent the maximum outward radial displacement of the inserts' corners are less than the predetermined dimensional tolerance. Furthermore, reading claims 46 and 48 broadly, WETLI ET AL. reads on the claims since the claims do not define what the manufacturing tolerance is.

In the alternative, even if it is argued that the cutting inserts defining a radial runout compensation dimension that is greater than predetermined dimensional tolerance of the tool, or the maximum outward radial displacement of the inserts' corners are less than the predetermined dimensional tolerance, is not disclosed expressly by WETLI ET AL., it would have been obvious to one of ordinary skill in the art at the time of the invention was made to pick whatever tolerance he/she wants, such that the radial runout compensation dimension is greater than the predetermined (selected) dimensional tolerance of the tool as well as have a maximum outward radial displacement of the inserts' corners are less than the predetermined dimensional tolerance, for the purpose of achieving precise machining and to ensure that discrepancies and poor workmanship are not introduced.



5. Claims 47 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wetli et al. (USP 6,322,296).

WETLI ET AL. discloses the claimed invention, i.e. predetermined manufacturing tolerance and radial runout compensation (see 102/103 rejection above), except for predetermined manufacturing tolerance of 0.002 inches and radial runout compensation

Art Unit: 3722

of 0.003 inches. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select predetermined manufacturing tolerance and radial runout compensation depending on the accuracy of the cut that is desired (i.e. rough finish versus precise cuts), because it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

### ***Response to Arguments***

6. Applicant's arguments with respect to claim 17 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of



Art Unit: 3722

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sara Addisu at (571) 272-6082. The examiner can normally be reached on 8:30 am - 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Monica Carter can be reached on (571) 272-4475. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sara Addisu  
(571) 272-6082

SA  
5/7/06

  
MONICA CARTER  
SUPERVISORY PATENT EXAMINER